NATURE STORIES FROM DARWIN

HENRY W. WILBUR

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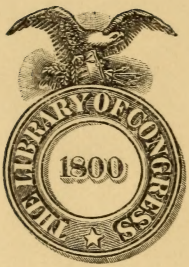

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NATURE STORIES

FROM

DARWIN

EDITED BY

HENRY W. WILBUR

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EDITOR'S PREFACE

It has been our aim in the stories here given to in no way alter the body of fact or warrantable inference as stated by the Great Naturalist.

In some cases Mr. Darwin's own language is used, and this will be readily recognized in the text by the quotation marks which enclose a literal reproduction.

The references at the bottom of the page indicate just where in Darwin's books, the story in particular may be found. This has been done so that those who desire may read the scientist's statements in the

original, and follow up his claims and deductions which the story in particular illustrates.

Darwin's scientific and literary habit was so marked in all that he did, that it is perfectly safe to always infer that isolated stories are not used by him as mere proof texts, but simply as impressive illustrations of traits and tendencies among our animal friends. His case, if he has been trying to make one, has already been established by an array of scientific studies and deductions, the story always being a side light, and not the main illumination of any statement made by him.

The only object in this compila-

tion is to help develop respect and reverence for all life, and especially for those forms of life personified in those creatures which in our conceit we humans call the "lower animals."

HENRY W. WILBUR.

Swarthmore, Pa.,
November, 1912.

BIOGRAPHICAL INTRODUCTION

The Darwin family was descended from Robert of Eston, who was born in 1682, he being the father of Dr. Erasmus Darwin, the famous physician, poet and natural philosopher. While undoubtedly an advanced thinker, it is quite likely that the religious and other radicalism of Erasmus was greatly exaggerated by the prejudice of the time in which he lived.

The father of the naturalist, Robert by name, and son of Erasmus, was also a physician, and attained considerable distinction in his profession. His far more famous son

had great appreciation for his ability, and reverence for his character. Charles Darwin, the naturalist, was born February 12, 1809. His father set his heart on Charles being a clergyman of the Church of England, but this desire was completely frustrated when the young man went on the voyage around the world, as the naturalist on board His Majesty's Ship, the Beagle. Darwin would probably have made his mark as a churchman had he taken "holy orders." After he had become famous, a German psychological society solicited his photograph, and spent a whole evening studying and discussing the physi-

ognomy and phrenology involved in the picture. The conclusion reached was that Darwin's "bump of veneration was developed enough for ten priests."

One of the great naturalist's strong traits was his regard for absolute truthfulness. Any carelessness of statement in dealing with facts, greatly disturbed him, and he held himself to the same rigid standard which he applied to others. This regard for the unvarnished truth gave to all of his utterances much of their charm and value.

A nature story from Darwin has behind it the guarantee of absolute reliability. The stories which he

used to illustrate his investigations, contain none of the element of unwarranted exaggeration employed by the "nature fakirs."

Mr. Darwin, in an autobiographical sketch prepared for his wife and children, divided his life and labors after his boyhood and his course at Cambridge into four periods. First, from the beginning of the voyage of the Beagle, in December, 1831, to October, 1836. This really represented the time he was with this expedition, studying the fauna and flora of the world, and especially that of South America and the Pacific islands. The second period covered three years, and ended with

his marriage in January, 1839. The third period he made analogous with the residence of the Darwins in London, which lasted over four years. The last period relates to the time from the removal to Down, September 14, 1842, to the close of the biographical notes in 1876, six years before his death.

It was during the first period that his habit of scientific research was formed. His reputation as a naturalist was established when his first report regarding his work on the Beagle was published. His original and unusually constructive work was accomplished during the fourth period. Exploiting the "develop-

ment theory," which made him the centre of biological and theological controversy for nearly a generation, had its intensification with the publication of the "Origin of Species," in 1859, and its climax in the appearance of the "Descent of Man," in 1874.

It is not necessary to go into the details of these publications. They involved long labor and painstaking research. Darwin was a semi-invalid nearly all of his life, so that he was more or less hindered in his literary work. Few of his books were turned off at white heat, and most of them involved years in their preparation and revision.

In the stories herein given Darwin stands revealed as a student of nature, and not as the originator and expounder of theories. He should also be taken as a very human person, gentle in mind and manner; sensitive to pain and suffering to a remarkable extent, and regarding living things with the adoration of a lover.

Few men were more harshly criticised and unjustly measured by the conservative elements in the Christian Church. Yet, in spite of this, he was a steady church goer, and a constant supporter of every effort for helping the world. The spirit of Christianity, as delivered by Jesus, was his spirit to a remarkable degree.

SAMPLES OF MONKEY WISDOM*

Certain American monkeys, not at all noted for exceptional intelligence, exhibit a rather remarkable gift of foresight and calculation, and also possess the ability to learn from experience.

Some of these monkeys were given eggs for food. The first time the monkeys tried to eat the new article of diet they roughly smashed the eggs, thus losing much of the contents. This waste finally appealed to the monkey's sense of economy as undesirable. Later on

* The Descent of Man. Vol. 1, pp. 45-46.

the monkey gently hit an egg against some hard object, picked off the broken parts of shell with his fingers, and proceeded to enjoy the entire inside of the shell.

The same type of monkeys seemed to learn from the things they suffered. After cutting themselves with any sharp tool, they either refused to touch it again, or handled it with extreme caution.

One of these monkeys was given lumps of sugar done up in paper. He lost no time in unwrapping the package and appropriating the contents. A practical joke was played on this monkey. A live wasp was put inside the paper with the sugar.

In his haste to get at the contents the monkey was stung. After that experience Mr. Monkey grew cautious, and placed each wrapped package to his ear to detect the presence of any undesirable insect inside. In this way he avoided being the victim of the same joke twice.

SOME MEMORY TESTS*

Many birds possess remarkable powers of memory and the ability to recognize not only other birds, but also animals and man. The mocking thrushes, who live in Lou-

* The Descent of Man. Vol. 2, p. 106.

isiana the year 'round, have no trouble to tell their aristocratic neighbors who go North in Summer. Their "class consciousness" is also acute. Those who stay at home do not hesitate to attack the travelers when they come back after a summer's wandering under less sultry skies.

Birds, like many animals, exhibit strong personal prejudices, and sometimes with no apparent reason. A tame partridge is referred to which seemed to recognize "everybody, and its likes and dislikes were very strong." He had an eye for gay colors, and any one who appeared thus garbed was seemingly

considered a superior being on sight. Ducks easily discriminate between dogs and cats kept on the premises, as against strangers who come upon the scene.

Darwin quotes Audubon's story of the wild turkey he reared and tamed. This bird always ran away from a strange dog, although friendly and familiar with the dog kept on the place. The turkey ran away to enjoy the freedom of the woods. Audubon seeing it, and thinking it a wild bird, "made his dog chase it; but to his astonishment the bird did not run away, and the dog, when he came up, did not attack the bird, for they mutually recognized each other as old friends."

A CRAB THAT EATS COCOANUTS*

Many curious crabs live around the coral islands of the Pacific Ocean. A particular crab is wonderfully equipped to get its living. It has two pairs of legs. The front legs terminate in strong and heavy pincers, while the lateral legs are fitted with appliances of the same sort, though much weaker and narrower. This crab lives on a diet of cocoanut, and he secures his food himself without assistance. Possessing himself of a cocoanut he pro-

*Journal of Research into the Natural History and Geology of Countries Visited During the Voyage of H. M. S. Beagle Round the World. Pp. 462-464.

ceeds to tear off the husks, fiber by fiber, and always from the right end, where the three "eye-holes" are situated. Having removed the heavy jacket from the top of the shell, Mr. Crab proceeds to hammer one of the "eye-holes" with his claws till he has made an opening. He then reverses his body, and with his narrower pair of pincers extracts the white, albuminous substance from the cocoanut. His dinner being thus ready, he eats to fulness in real epicurean fashion.

This crab also makes for himself a rather comfortable house, which he burrows underneath the roots of a tree. He then makes his bed by

collecting a large quantity of cocoa-nut fibre. So plentifully are these crab houses supplied with husks, that the natives rob the homes of the crabs, using the fibrous mass as junk.

It is related that the strength of this crab's front pincers was once tested by confining one in a strong tin box, the lid being secured with a wire. Mr. Crab proved himself a most successful jail breaker. He punctured many small holes in the tin, turned down the edge of the box, and so escaped.

A CASE OF CAUSE AND EFFECT*

A female baboon, living as a pet in captivity, developed a passion for the ownership of smaller animals. She not only bestowed her affections on baby monkeys, not of her own family, but would steal puppies and kittens, which she would carry about with her as if they were her own children.

She did not, however, exhibit universal altruism in her conduct. At no time would she share her food with her stolen adopted progeny. This trait surprised the observing

* The Descent of Man. Vol. 1, pp. 39-40.

Alfred Brehm, the African traveler, as he found that his monkeys habitually divided their food with their own offspring. This particular baboon may have been discriminating between alien puppies and kittens, and the children of her own flesh and blood.

On one occasion this baboon exhibited an almost marvelous capacity to trace trouble to its real source. One day one of her adopted kittens scratched the foster mother badly. The baboon was evidently both surprised and grieved. But she determined to speedily know all about it. Immediately she made a careful examination of the naughty

kitten, spending considerable time examining its feet. The source of trouble was very soon located by the monkey mother. She reached a perfectly logical conclusion, and at once applied an equally logical line of treatment for the case. Without more ado she bit off the kitten's offending claws.

Not all boys and girls or men and women go as systematically or intelligently about the task of finding out what hurts them, or as thoroughly proceed to remove the cause of trouble as did this baboon.

SLAVE-HOLDING ANTS*

There are different species of slave-holding ants doing business in various sections of Europe and North America. These ants differ greatly in their characteristics and methods. One species of slave-holders are singularly indolent and helpless touching their ordinary affairs, being absolutely dependent on their slaves for the most personal and ordinary service. Apparently the only effort these ants ever make on their own account is the capturing of their slaves. This done, they lie back and take their ease. The task

* Origin of Species. Pp. 213-215.

of making the nests for the family and feeding the young is performed by the slaves. If it becomes necessary for the community to migrate, the slaves direct the moving, even carrying their masters in their jaws while in transit. So lazy are these slave-holders that they will not feed themselves even when food is within easy reach. Without the slaves the whole family would starve to death. The act of capturing the slaves must be a very vivid memory with them or they would not be held in bondage by such lazy task-masters.

With another species of slave-makers the case is entirely different.

The slaves and their masters of this species live in separate apartments, the inferior ants being carefully segregated. In case of disturbance or danger, masters and slaves work together. When migrating, the practise of the other kind of ants, as stated above, is reversed, the masters always taking the lead, and even carrying their slaves.

The slave ants in Switzerland are really household servants, their principal work being domestic. Part of their business is to open and shut the doors of the ant-houses morning and night. For it must be remembered that these social ants protect their domiciles with doors.

This species of ant seems to respect the social and other laws of the insect world. In their acts of preying and conquest they nicely discriminate between the ants that belong to the recognized servile class and those of the free folk, and seldom if ever capture the young of the kind of ants not held in servitude.

ANTS THAT KEEP A DAIRY*

Among the curious things in the insect world are the aphides. To be perfectly plain, these insects are plant parasites, or lice. While themselves living off the juices of trees

* Origin of Species. Pp. 203-214.

or plants, nature makes them an unconscious part of a game of give and take, for they afford a means of luxurious living to other insects.

Near the abdomen of the aphides are small, almost microscopic tubes, from which a sweet liquid is emitted, which is greatly enjoyed by ants. The liquid secretion of the aphis is called honey-dew.

The aphides are captured and kept as food producing insects, very much as men keep cows for their milk. The ants milk the aphides by rubbing their antanae over the tubes of the insects containing the honey-dew, when it is emitted and greedily devoured by the ants. It is re-

corded that an artificial disturbance of the tubes did not cause the aphides to give up their sweet liquid.

While the aphides do not seem to object to the milking process of the ants, it is not claimed by Darwin that they give up their honey-dew simply for the benefit of the ants. The secretion of sweet fluid, (if not removed by the ants) is after a time voided by the aphides. It is an interesting fact, however, that the appearance of the ants on the scene with their milking performance relieves the aphides, and of course feeds the ants. This arrangement, in which both sides are benefited, seems to be a bit of ideal reciprocity in the insect world.

CASES OF BIRD VANITY

It is affirmed by Darwin and other naturalists, that birds of gorgeous plumage do not always use their fine feathers for lovemaking purposes. The peacock "evidently wishes for a spectator of some kind, and will show off his finery, as I have often seen, before poultry or even pigs. All naturalists who have closely attended to the habits of birds, whether in a state of nature, or under confinement, are unanimously of the opinion that the males delight to display their beauty." But at the mating season, a

*Descent of Man. Vol. 2. Pp. 83-84.

display of bird vanity seems to be particularly in order.

The rock-bird of South America is said to be the most beautiful creature in the bird world. The male delights to display his plumage. He spreads his wings, throws up his head, and opens his tail like a fan. The bird struts about with a hopping gait until tired, when he is relieved by another. "Thus three of them successively took the field, and then with self-approbation, withdrew to rest."

A HEROIC BABOON*

One sunshiny morning in far-away Abyssinia a troop of baboons were crossing a broad valley, possibly emigrating in semi-human fashion from one section of country to another. Part of the company had passed over the low-land, and were ascending the safer rocky mountain-side.

That part of the company still in the valley were attacked by dogs, representing a group of human hunters near by. No sooner was the attack begun than the old males came down from the mountain, and

* The Descent of Man. Pp. 72-73.

made such a fearful noise with their mouths that the dogs were frightened, and beat an inglorious retreat. The hunters encouraged the dogs, and then tried to force them to renew the attack, but during the period of delay, all the baboons but one had made a safe escape to the rocks.

In the haste and confusion of the demonstration, a young baboon not more than six months old had been left behind. He was able to climb on a piece of rock, when he was quickly surrounded by the dogs. The little fellow in his fear set up a piteous appeal to his fellows for help.

"Now one of the largest males,

a true hero, came down again from the rocky retreat, and slowly went to the young one, coaxed him, and triumphantly lead him away."

This exhibition of monkey courage so much astonished the pack of dogs that they had no ability to attack the deliverer, leading his little charge to safety. An exhibition of the same sort of moral courage by men generally disconcerts the noisy, belligerent human brute and bully.

BIRD BOWER BUILDERS*

The Bower-birds, of Australia, have an over-developed aesthetic

*The Descent of Man. Vol. 2, pp. 66-68.

sense. The bowers they build are purely for ornamental and attractive purposes, as the nests of these birds are always built in the trees. In the main the bowers are built by the male bird and to make them extremely attractive the bowers are highly decorated with feathers, shells, bones, leaves and other material which he considers beautiful. It is believed that these bowers are built solely as places of assemblage, serving the purpose of a sort of bird ball-room. Both sexes assemble in them, the theory of the naturalist being that the main purpose of the bowers is to afford a place for lovemaking. Some species of Bow-

er-birds build bowers several feet in length and eighteen inches high, raised on a thick platform of sticks. Much labor and pains are bestowed upon the bowers, which seem to be forgotten after the mating season is over.

AN AQUATIC BALLOON*

The Diodon is a strange fish that inhabits the tropical South American ocean, which possesses a singular power of self-inflation. The air is swallowed and forced into the cav-

*Journal of Researches into the Natural History and Geography of the Countries Visited During the Voyage of H. M. S. Beagle Around the World. Pp. 13-14.

ity of the body, its return being prevented by muscular contraction which amounts to a stop valve. Water, which also assists in the inflation process, enters as a gentle stream through the mouth. The fish remains distended for a short time, when the air and water are expelled with considerable force through the bronchial aperatures and the mouth. A portion of the water is expelled at will, the apparent reason for it being taken in is for the sake of regulating the specific gravity of the body.

Like many other living things, the Diodon possesses several means of defense. It can quite serenely

eject water from its mouth some distance, at the same time making a curious noise with its jaws, such demonstration apparently being made to frighten its undesirable neighbor.

The Diodon also has the ability to secrete from its skin, when handled, a beautiful carmine fibrous matter, which will stain ivory and paper with a permanent color. Mr. Darwin says: "I am quite ignorant of the nature and use of this secretion."

Darwin mentions on the authority of another naturalist, that the Diodon may be frequently found floating alive and distended in the

stomach of the shark. "On several occasions it has been known to eat its way not only through the coats of the stomach, but through the sides of the monster, which has thus been killed. Who would ever have imagined that a little soft fish could have destroyed the great and savage shark?"

THE CONQUEST OF THE CORAL

Darwin describes the persistence of the coral builders as they rear their structures in spite of winds or waves. Intensified by the perpetual and prevailing trade-winds, no periods of repose come to coral walls. These trade-winds cause

breakers as forceful as those raised by a heavy wind on the rocky shores of the temperate ocean. "It is impossible to behold these waves without feeling a conviction that an island, though built of the hardest rock, let it be porphyry, granite or quartz, would ultimately yield and be demolished by such an irresistible power. Yet these low, insignificant coral-islets stand and are victorious, for here another power as an antagonist, takes part in the contest. The organic forces separate the atoms of carbonate of lime, one by one, from the foaming breakers, and unite them into a symmetrical structure. Let the hurricane

tear up its thousand huge fragments; yet what will that tell against the accumulated labor of myriads of architects at work night and day, month after month? Thus do we see the soft and gelatinous body of a polypus, through the agency of the vital laws, conquering the great mechanical power of the waves of an ocean which neither the art of man nor the inanimate works of nature could successfully resist."

THE PORCUPINES' WARNING QUILLS*

Shakespeare knew something about porcupines, as this quotation from Hamlet shows:

"Make thy two eyes like stars,
Start from their spheres,
Thy knitted and combed locks to part,
And each particular hair to stand on end,
Like quills upon the fretful porcupine."

But he probably did not know that the porcupine has two kinds of quills, both showing, in their structure, a wonderful adaptation of means to ends.

Darwin tells us that the quills on

*Expression of the Emotions in Animals and Man. Pp. 93-94.

the porcupine's tail are very different from those on the body. The tail quills "are short, hollow, and thin like a goose-quill." Their ends are open like a tube, and look as if they had been evenly cut off. "They are supported on the body by long thin elastic foot-stalks. Now, when the tail is rapidly shaken, these hollow quills strike against each other, and produce a peculiar continuous sound.

Porcupines are animals that delight to prowl about at night, and these noise-producing quills seem to serve a wise purpose of warning. Mr. Darwin assumes that when porcupines hear "a prowling beast of

prey, it would be a great advantage to them in the dark to give warning to their enemy what they were, and that they were furnished with dangerous spines. They would thus escape being attacked."

THE DOG WITH THE HOT-HOUSE FACE*

Among Darwin's pet dogs was a large black and white half-bred retriever. This animal was the delighted companion of the naturalist in his walks about the home and neighborhood. Bob, for this was the dog's name, had but one fear in the

* Expression of the Emotions in Animals and Man. Pp. 59-60.

jaunts which he took with his master. This fear was that the walk would be too short.

When the pair started out, Bob generally led the way, and he was an elated leader. Stepping high, with head much raised, erected ears, and tail carried aloft, but not stiffly, he was the picture of four-footed pleasure.

But Darwin was interested in living things besides dogs. Not far from the residence was a hot-house, where the naturalist cultivated plants for experimental purposes. This was reached by a path which branched to the right, near the dwelling. When Darwin would

turn down this path, Bob showed disappointment to the point of dejection, for his dog mind made him fear that the hot-house would really be the end of the walk. The instantaneous and complete change in Bob's expression formed one of the naturalist's favorite studies of the emotions in animals. So alert was the dog that any swerving of his master towards the hot-house brought on the symptoms of dejection. It worked the same when an inclination to turn down the path was shown, simply to experiment with Bob's emotions. When this feeling came the ears fell to the side of the head, the attitude of the whole

body changed and the eyes lost their sparkle. The case of Bob became so well known to all the Darwin family that he was called by them the dog with the "hot-house face."

A MATTER OF MEMORY.*

"It is almost superfluous to state that animals have excellent memories for persons and places." The case is cited of the Cape of Good Hope baboon, which recognized Sir Andrew Smith with manifestations of joy after an absence of nine months.

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*Descent of Man. Vol. 1, p. 44.

Mr. Darwin had a dog who was savage to strangers, and exhibited strong dislike to persons he did not know. After an absence of five years Mr. Darwin tested the dog's memory by going near the stable where he lived, "and shouted to him in my old manner; he showed no joy, but instantly followed me out walking, and obeyed me, exactly as if I had parted with him an hour before." Evidently the sound of the familiar friendly voice aroused recollections that had been in the background for years.

Ants, we are assured, are able to recognize their fellow-ants, members of the same community, after being separated for months.

DO ANIMALS DREAM?*

Darwin was quite sure that animals are not entirely devoid of imagination. He quotes without criticism Jean Paul Richter's remark that "the dream is an involuntary act of poetry." He then refers approvingly to Dr. Jerden's opinion that birds dream. Darwin intimates that dogs, cats and other animals dream; and these dreams are vivid as impressions to the animals that have them. He says, "We must admit that they possess some power of imagination."

Without feeling sure that dreams are the stuff of which poetry is

*The Descent of Man. Vol. 1, p. 44.

made, or that even the imagination of animals is fortified by judgment, or the power of combining impressions enjoyed by them, the imagination of our pets, helps to establish the common kinship which we have with them.

THE POT WOULD NOT COOK.

While in the Cordillera Mountains, Mr. Darwin had a demonstration of the fact that a boiling pot will not always cook vegetables. On account of the great elevation, and the diminished pressure of the atmosphere, water boils at a much lower temperature than on the low-

er levels. A pot of potatoes was left on the fire all night, and the next morning boiled again, but the tubers were not cooked. Two persons in the party not up in physics came to the conclusion that the pot, which was a new one, simply did not choose to boil potatoes.

A SEA-ISLAND LIZARD.*

The Galapagos Archipelago is the home of land lizards which have a number of peculiarities. They seem to thrive in the dry and sterile

*Journal of Researches into the Natural History and Geology of the Countries Visited During the Voyage of H. M. S. Beagle Round the World. pp. 388-389.

sections of the islands. Individual specimens frequently weigh as much as a dozen pounds.

They live in burrows, which they excavate, and so numerous are they that in many cases the land is nearly undermined by these somewhat subterranean creatures. In digging their burrows they work with first one side and then the other side of their bodies. The digging is done with one fore paw, which loosens the earth and tosses it back, when the corresponding hind foot heaves it beyond the mouth of the hole. "That side of the body being tired, the other takes up the task and so on alternately. I watched one for

a long time, till half its body was buried; I then walked up and pulled it by the tail; at this it was greatly astonished and soon shuffled up to see what was the matter; and then stared me in the face, as much as to say, 'What made you pull my tail?' "

These lizards seem to have some dramatic skill, for they will act very fierce, although they are quite inoffensive and harmless. They seem able to live practically without water, getting their liquid refreshment from the succulent plants, upon which they feed. They eat very deliberately, but do not chew their food.

The birds and smaller animals of

the region understand very well how harmless the land lizard is. Birds and lizards are often seen nibbling at the same piece of cactus; and it is not uncommon for the little birds to perch themselves on the lizard's back.

POLLY THE FOX-TERRIER.*

Mr. Darwin's favorite dog was Polly, a rough, white fox-terrier. She is described as particularly affectionate and sharp-witted. Between this little animal and her master a great affection existed, and

*The Life and Letters of Charles Darwin. Vol. 1. pp. 92 and 107-8.

they understood each other perfectly.

Polly was always able to anticipate Mr. Darwin's journeys. She noted every step in the preparation, and as the time for his departure approached became more and more dejected. She was equally able to anticipate her master's return home. His son, in his biographical sketch of Mr. Darwin, says: "He used to greatly enjoy the welcome he got from his dog Polly, who would get wild with excitement, panting, squeaking, rushing 'round the room and jumping on and off the chairs; and he used to stoop down, pressing her face to his, letting her lick

him, and speaking to her with a peculiar tender caressing voice." It must surely have been a touching sight to see the great lover of nature thus bend to receive the caresses of his little four-footed friend.

Polly performed many clever tricks, such as catching biscuits off her nose. She knew and coveted certain stock things Mr. Darwin would say to her. When let out of the door, and her master would say it was done so that she might bark at "naughty people," she was filled with delight, and always kept the contract so far as the barking was concerned. A few days after Mr. Darwin's death, Polly had to be

killed, as she was very sick, beyond the hope of recovery.

THE TRICKY CUCKOO.*

The English cuckoo has a habit of laying her eggs in the nest of some other bird, thus shirking the task of hatching them. This, of course, also means that the cuckoo parents transfer the task of caring for the young to the bird who has unwittingly, if not unwillingly, hatched them.

Be that as it may, naturalists are not agreed as to the real cause for the cuckoo thus imposing her re-

*Origin of Species. pp. 109-10.

sponsibilities upon some other bird. As the cuckoo does not lay her eggs daily, but at intervals of two or three days, it may be that her strange habit is not due to laziness or indifference, but to avoid having unhatched eggs and live birds on her hands at the same time. When the cuckoo thus deposits her eggs in the nest of her neighbors she divides her enforced labor by laying only one egg in a particular nest.

Naturalists are puzzled over the conduct of this bird, for the American cuckoo makes her own nest, has eggs and young successively on her hands at the same time, and does not seem to have any trouble in

dealing with the situation. While this is the usual habit of the native bird, there are cases which warrant the belief that occasionally the American cuckoo plays an English trick on its neighbors by laying an egg in the nest of some other bird.

The Australian cuckoo seems to follow the conduct of her English relative. This bird endeavors to select the nest of a bird whose eggs are most nearly the color of her own, thus apparently intending to deceive the bird whose nest she has invaded. The young cuckoos seem to be absolutely deficient in gratitude, for they proceed, when they get large enough, to eject the children of their foster parents.

BIRD PROUD OF HIS BEAUTY.*

The goldfinch is one of the most handsome of English birds. His wings are unusually beautiful. The shoulders are a shiny black, "while the dark-tipped wing-feathers are spotted with white, and edged with golden yellow." When the male is in his courting mood, he employs all of his arts of persuasion. Swaying his body from side to side, he slightly expands his wings, first one side and then the other; the sunlight reflects on the golden wing-feathers, giving them a most striking effect. It would hardly be right to call the

*The Descent of Man. Vol. 2, p. 91.

goldfinch a fop, yet he knows how to put his best side to the front as successfully as any of the men folks among the human species.

WOOING OF THE KATY-DID.*

Our American Katy-did is a strange and also a cute insect, and in this respect he is resembled by the entire cricket family. The noisy tree-tops, where the Katy-dids dwell, simply resound with the notes of rival gentlemen of the species, who are determined that no challenging chirp from a neighboring limb shall go unanswered. It is this effort of ardent lovers to

*Descent of Man. Vol. 1, p. 342.

eclipse each other which makes up the insect concert.

The field cricket's note is also a love song, and he is artful to a high degree in making himself agreeable to his lady-love. In the evening he places himself at the entrance to his underground abode, and loudly proclaims his presence and purpose. When the object of his affection approaches, he lowers his voice, and in gentler mood presents his claim. He does the best he can to be a palaverer.

JEALOUS BIRD SINGERS.*

Mr. Darwin and other naturalists agree in the opinion that certain male birds sing out of a spirit of rivalry or a sense of vanity, and not always to please the opposite sex. Birds have been known to literally sing themselves to death, impelled by pure delight at their own performance.

We are told of a case where a canary bird sang enthusiastically while viewing himself in a mirror. At last thinking he was facing a rival bird, he dashed himself against his own wings.

*Origin of Species. Vol. 2, pp. 50-51.

The jealousy of birds in song has been taken advantage of by bird-catchers. "A male, in good song, is hidden and protected, while a stuffed bird, surrounded by limed twigs, is exposed to view. In this manner a man, as Mr. Weir informs me, has caught in the course of a single day, fifty, and in one instance seventy, male chaffinches." The stuffed bird and the hidden singer served as decoys for the other birds.

THE EAGLE AND THE MONKEY.*

A small monkey in a tree-top was attacked by an eagle, the evident

*Descent of Man. Vol. 1, p. 73.

purpose being to carry the little fellow away to be food for the young eagles. The monkey, however, clung tenaciously to the limb, and cried lustily for assistance. Many members of the monkey band came enthusiastically to the rescue. With loud voices and united action they attacked the common enemy. Their mode of attack was unique, for they proceeded to pull out the eagle's feathers. The desired effect was produced, for the king of the air forgot his prey and thought only how to escape from his tormentors. His pride as well as his person may have been wounded in this experience. Brehm, the naturalist, quoted by

Darwin, remarked, "This eagle assuredly would never again attack a monkey in a troop."

THE SINGER AND HIS SONG.*

It appears that while the love-making among birds is generally done by the male, it is the privilege of the female to do the choosing. In many cases it is found that the lady bird selects the singer with the most musical voice. It is said that in other cases the canary always chooses the best singer, and "in a state of nature the female finch selects that male out of a hundred whose notes please her most."

*Descent of Man. Vol. 2, p. 50.

That birds pay attention to each other's song is not doubted. A certain bullfinch had been taught to pipe a German waltz. This bird was finally introduced into "a room where other birds were kept." When he began to sing all the other birds ranged themselves on the nearest side of their cages, and were delighted and appreciative patrons of the bird recital.

A SEAL WITH A HOOD.*

The sea elephant is a most curious beast. His nose is strangely flexible, and can be lengthened at will, especially during certain seasons of the year, and at these times it can be erected. The voice of the male is particularly loud and strong, and can be heard at a great distance, at least three or four miles. Naturalists believe that the voice is very much strengthened by the singular proboscis.

An allied kind of seal, known as the "bladder nose," has the head cov-

*Descent of Man. Vol. 2, pp. 264-265.

ered by a great hood. This hood can be inflated until it more than equals the whole head in size. Scientists are not agreed whether this hood is given the seal as a protection against accidents, or whether its purpose is simply to strengthen the voice. The fact that whenever this strange creature is agitated the hood or bladder is inflated, might fortify either supposition. Whatever the purpose, this bladder is one of the wonderful provisions which nature makes in the development of animals.

MONKEYS AND DRINK.*

Monkeys are apt learners, and seem to be able to be taught bad habits as well as good ones. They rapidly develop a taste for tea, coffee and liquors. Mr. Darwin says that he has seen them smoke tobacco with evident pleasure.

Brehm, the naturalist, declares that he has seen monkeys captured in northeastern Africa, after having first been made drunk by the natives. He also tells of monkeys kept in confinement being intoxicated. These animals had all the symptoms

*Descent of Man. Vol. 1. p. 12.

of men "the day after." They held their aching heads in their hands, and were as sick and penitent as any drunkard. When in this condition the monkeys turned away from liquor with distrust, but took the juice of lemons gladly.

The story is told of an American monkey, who, after getting drunk on brandy, would never touch it again. Mr. Darwin sagely remarks that he was "thus wiser than many men."

A CASE OF RACE PREJUDICE.*

Some birds have well-developed race prejudices. On the Faroe Islands there is a variety of pied ravens. These birds, instead of being jet black, have the head and breast white, with the tail feathers tipped with the same color.

In spite of their evident right to a home in the land of their birth, they are considered "undesirable citizens" by the members of the regular raven family. The more aristocratic if not more numerous ravens make life miserable for their

*Descent of Man. Vol. 2, p. 121.

unpopular relatives, as they are pursued and persecuted with much noise by the more common birds.

THE MAGPIE MARRIAGE.*

Delamere Forest in England used to be the annual rallying point of the magpies. To this spot the birds came in great numbers. They generally divided themselves into flocks or groups, and indulged in more or less prolonged confabs.

These annual affairs had some rather human characteristics. The chattering was confusing, and the bustling about and jostling of each

*Descent of Man. Vol. 2. p. 98.

other led to rather disorderly outbreaks. It was not uncommon for a few fights to get under way during the "fair," if such it was.

These gathernigs always came in the spring, and the country folk called this the "great magpie marriage." At any rate when the "party" broke up the birds separated, and then departed by twos, apparently as husband and wife for the season.

INTEREST AND KINDNESS OF BIRDS.*

Birds have been known to exhibit sympathy and extend care to or-

*Descent of Man. Vol. 2, p. 105.

phans of their own, and sometimes of distinct species. Under this kindly impulse little birds that have been deserted for any cause by their natural parents are regularly fed.

Darwin refers to Mr. Buxton's story of the parrot "which took care of a frost-bitten and crippled bird of a distinct species." The feathers of the crippled bird were cleaned, and she was defended from the attacks of birds not so kindly as her well-disposed friend.

It is also claimed that birds not only sympathize with their fellows in trouble, but also rejoice in their pleasure and good fortune. A case is told of a pair of cockatoos who

made a nest in a near-by tree, and "it was ludicrous to see the extravagant interest taken in the matter by others of the same species."

BIRDS ATTRACTED TO THE BEAUTIFUL.*

Other stories illustrate the admiration of many birds for the beautiful. There are cases, however, where Darwin and other naturalists are not certain whether the attraction of birds to bright and beautiful things is due to admiration or curiosity. In either case these birds exhibit intelligence and some judg-

*Descent of Man. Vol. 2, p. 107.

ment in their attraction for the beautiful. The Rue bird of the Ionian Islands "will dart down to a bright-colored handkerchief, regardless of repeated shots." Larks are often brought to earth and caught "by a small mirror made to move and glitter in the sun." The magpie and raven have been known to steal and hide bright objects, such as silver articles or jewels. The decorations employed by many birds in building their nests, beautiful pieces of plants or feathers being neatly woven into the nests and sometimes so placed that the ornaments "stand out beyond the surface," can hardly

be due to curiosity, but rather to a manifest taste for the beautiful.

ANIMALS AS LEARNERS.*

It seems to be a pretty well established fact that animals not related to each other learn certain acts from association. Two kinds of wolves reared by dogs learned to bark like their foster parents, and the jackal has been known to also be an apt learner in the same line.

There are cases where puppies which were nursed by cats learned to lick their paws and wash their faces like the felines. The supposi-

*Descent of Man. pp. 42-43.

tion is that whenever dogs thus wash their faces the performance was learned from their cat friends.

Just how many cases of this kind can be credited to voluntary imitation is not stated by the scientist.

BIRDS WITH SPRING SUITS.*

Tennyson was both poetically and scientifically correct when he wrote in Locksley Hall:

"'In the spring a fuller crimson
Comes upon the robin's breast;
In the spring the wanton lapwing
Gets himself another crest."

Darwin tells us that certain birds become more bright colored in the

*The Descent of Man. Vol. 2. pp. 82-83.

spring, but not because of the shedding of old feathers and getting new ones. It is not certain whether this transformation is the result of an actual change of color in the feathers, or because their more obscure margins fall away, leaving the brighter parts exposed.

A variety of pelican which has a beautiful rosy tint, and lemon-colored marks on the breast, is a good sample of the change of plumage. These lemon-colored marks overspread the whole breast in the spring, but they disappear in about two months after they have been attained. "Certain feathers become more bright-colored in the spring,"

and a number of American birds undergo the same transformation. Not all birds of the same class, however, thus put on a spring suit by changing their plumage.

CASES OF SURPRISE AND CURIOSITY.*

Darwin asserts that "all animals feel wonder." But that is not all. They all exhibit curiosity in a marked degree. Some very fine samples of the way this quality even overshadowed fear are given. A stuffed and coiled-up snake was taken into a monkey house in a Zoological Gar-

*Descent of Man. Vol. 1. pp. 41-42.

den. The excitement which this strange intruder caused is described as ludicrous. Some of the monkeys "dashed about their cages and uttered sharp signals of danger, which were understood by the other monkeys." The animals became very nervous, so much so that when a familiar object like a ball was introduced under the straw and made to move they all started away. A live snake was then placed in a paper bag and deposited in a monkey cage. The mouth of the bag was only loosely closed, when one of the monkeys peeped in, had a view of the uncanny visitor and beat a retreat. But monkey curiosity had

become contagious, and not one was willing to be satisfied with the experience of the original adventurer, for each monkey proceeded to take sly, but momentary peeks, at the "dreadful object lying at the bottom of the paper bag."

A SMART SEA GULL.*

Real naturalists do not negatively dogmatize. They do not assert with positiveness that the creatures below man have no reasoning faculties. While it is admitted that reason in birds and animals is of a low form, Mr. Darwin felt that there

*The Descent of Man. Vol. 2. p. 104.

are many instances where the mental processes are of such a quality as to rank as reason. He quotes Yarnell in his work on "British Birds" as furnishing a case in point.

A gull, presumably in captivity, was given a small bird for his dinner, but he was unable to swallow the morsel. We are told that the gull "paused for a moment, and then as if suddenly recollecting himself, ran off at full speed to a pan of water, shook the bird about in it until well soaked and immediately gulped it down." After that when the portion of food was too large and hard to be comfortably managed by the

gull he promptly repeated his "soaking" experiment.

A MONKEY SAVED HIS FRIEND.*

In the London Zoological Garden a large and fine baboon attacked the keeper and inflicted serious wounds on his body. In fact had the attack been prolonged it is likely the keeper would have been killed.

A small American monkey, noted for its timidity, saw the attack. He was very fond of the keeper, and seeing his friend's peril he bravely rushed to the rescue, and by biting the baboon and screaming loudly he

*Descent of Man. Vol. 1. p. 75.

so distracted the assailant that he quit his assault on the keeper.

This little animal gave the finest evidence of friendship in that he risked his own life for his friend.

SLEEPING PLANTS*

It seems to be a universal law that all living things must have their periods of sleep, when they experience rest and recuperation. Even the leaves on plants sleep. It used to be the theory that leaves only move when either going to sleep or when waking from their slumbers. But investigations have demonstrat-

*The Movements of Plants, pp. 403, 47.

ed that leaves move both day and night.

The leaves and twigs of plants have movements of their own, not caused by the wind, but apparently self-impelled. It is thought these movements may have been inherited in some cases.

While the leaves of plants move in their waking as well as in their sleeping hours, it is known that leaves move more quickly when going to sleep and when waking than at other times.

THE VALUE OF ATTENTION*

The faculty of attention is just as important in the development of animals as it is in the education of men. In spite of the great function which has been assigned instinct, animals vary as much as men in their gifts. Mr. Darwin assures us that those who train monkeys find that success in this accomplishment depends as much upon the animal's power of attention as it does upon the skill of the trainer.

A man who trained monkeys, and who bought them in the market, was

*The Descent of Man, Vol. 1, p. 43.

quite willing to pay twice the ordinary price if he might test them out two or three days before the final decision. Monkeys which were easily distracted, and whose attention was given to outside matters, made poor pupils, and training them became a hopeless case. Such monkeys could not be corrected by punishment, each effort only making them more sullen and obstinate. On the other hand, monkeys which gave careful attention to the trainer, made good pupils, and became expert performers of tricks. Attention to the thing in hand seems universally necessary to success.

MOTHERLY MONKEYS*

Maternal care is exhibited by the females of all the higher animals, and many exhibitions of this sort are akin to human conduct. The Cebus is a particularly intelligent American monkey. The mother of this species watches her baby when sleeping, and has been known to drive away the flies which disturbed her infant.

A monkey mother of another kind was phenomenally intelligent and thoughtful regarding the care of her offspring. One day she took her

*Descent of Man, Vol. 1, p. 39.

children to a stream, and energetically and carefully washed their faces. We are not told whether the young monkeys entered the same protest as boys sometimes do under like circumstances.

ARTISTIC BEES*

Bees are social insects, and engage in co-operative labor. In making their wonderfully geometric cells, they work together. It often happens that a score of bees may begin on a single cell. They do not, however, finish one cell before

*Origin of Species, p. 222.

they begin another. But they never forget where they leave off a particular piece of unfinished work, going back and completing the task in accordance with an arrangement all their own.

Mr. Darwin notes not only the mechanical ability of bees, but also their artistic skill. When he put a thin layer of melted vermilion wax on a rim of unfinished comb, the bees made use of the gift to color the cells. He says, "I invariably found that the color was most delicately diffused by the bees, as delicately as a painter could have done it with his brush, by atoms of the colored

wax having been taken from the spot on which it had been placed, and worked into the growing edges of the cells all around."

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